

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently amended) A heat exchanger, ~~in particular oil cooler,~~ for motor vehicles, the heat exchanger being formed from interconnected plates, there being formed between the plates cavities which are closed off outwardly and through which a first and a second medium flow alternately in each case via at least one inflow line and outflow line, the plates being profiled in such a way that, between the respective profiles of the plates, contact points occur, in the region of which the plates are fastened to one another, wherein the profiles of the plates and their contact points are designed in such a way that the flow, formed between the plates, of the first and the second medium from the corresponding inflow line to the corresponding outflow line does not run rectilinearly,

wherein the plates have a recurring wavy profile comprising legs running rectilinearly between regions of curvature.

2. (Currently amended) The heat exchanger as claimed in claim 1, wherein the ~~plates have a recurring wavy profile which extends essentially transversely with respect to the main throughflow direction (H) and, in particular, is waved in a zigzag-shaped manner around the direction of extent.~~

3. (Currently amended) The heat exchanger as claimed in ~~claim 1~~ claim 2, wherein ~~the wavy profile has legs running rectilinearly between regions of curvature, the wavy profile being characterized by~~ comprises the leg length of the legs, by the leg angle defined between the legs and ~~by the profile depth of the wavy profile.~~

4. (Currently amended) The heat exchanger as claimed in ~~claim 1~~ claim 2, wherein the configuration of the wavy profile is characterized by the run of the profile in the region of the legs and of the regions of curvature, profiles adjacent to one another recurring in a predetermined division.

5. (Currently amended) The heat exchanger as claimed in ~~claim 1~~ claim 2 wherein the wavy profile has a flat region on the outside of a wave back.

6. (Currently amended) The heat exchanger as claimed in ~~claim 1~~ claim 5 wherein the flat region is between 0.1 mm and 0.4 mm in a cross section of the wavy profile.

7. (Currently amended) The heat exchanger as claimed in ~~claim 1~~ claim 3, wherein the leg angle is preferably between 45° and 135° ~~, preferably around 90°.~~

8. (Currently amended) The heat exchanger as claimed in ~~claim 1~~ claim 3 wherein the profile depth is ~~between 0.3 mm and 2 mm, in the case of liquid media preferably between 0.5 mm and 1 mm and, in particular, between 0.7 mm and 0.8 mm,~~

and, in the case of gaseous media, ~~is preferably in the range between 0.6 mm and 2 mm and, in particular, around 1.5 mm.~~

9. (Currently amended) The heat exchanger as claimed in ~~claim 1~~ claim 3, wherein the leg length is in the range of 8 mm to 15 mm and, ~~in particular, in the range of 9 mm to 12 mm.~~

10. (Currently amended) The heat exchanger as claimed in ~~claim 1~~ claim 2, wherein the wavy profile is designed as an embossing in the plate, the plates consisting ~~preferably of a metallic material, in particular comprising aluminum, the plates preferably and~~ being coated on at least one side with soldering aid material.

11. (Previously presented) The heat exchanger as claimed in claim 1, wherein the plates have as inflow lines and outflow lines in each case a pair of bores perpendicularly with respect to the plate plane, the bores being raised with respect to the basic plane in such a way that there is a fluidic connection from one of the two bores alternately only to every second plate interspace.

12. (Currently amended) The heat exchanger as claimed in ~~claim 1~~ claim 11, wherein the raised region of at least some of the bores is surrounded by a region preferably leading around annularly and free of wavy profile.

13. (Currently amended) The heat exchanger as claimed in ~~claim 1~~ claim 12,

wherein the region of the bores assigned to the inflow lines, distributor ducts are provided, which are defined preferably by a wavy profile with a leg angle which is increased, as compared with the leg angle of the wavy profile.

14. (Currently amended) The heat exchanger as claimed in ~~claim 4~~ claim 11, wherein the bores assigned to the inflow lines are oval, elliptical or rectangular.

15. (Currently amended) The heat exchanger as claimed in ~~claim 4~~ claim 2, wherein two plates different from one another in terms of the wavy profile are used alternately, the wavy profiles differing from one another at least in terms of one of the features comprising leg length, leg angle and profile depth.

16. (Currently amended) The heat exchanger as claimed in ~~claim 4~~ claim 2, wherein the wavy profile of one side of the plate differs from the wavy profile of the other side of the plate at least in terms of one of the features comprising leg length, leg angle and profile depth.

17. (Currently amended) The heat exchanger as claimed in ~~claim 4~~ claim 2, wherein the wavy profiles of adjacent plates are identical to one another.

18. (Previously presented) The heat exchanger as claimed in claim 1, wherein the heat exchanger is formed from a stack of plates, the plates corresponding to one another and being arranged so as to be rotated alternately through 180° with respect to

one another.

19. (Currently amended) The heat exchanger particularly as claimed in ~~claim 4~~ claim 2, wherein the plates have a bent edge, the edges of adjacent plates bearing one against the other and preferably being connected to one another by brazing.

20. (Currently amended) The heat exchanger as claimed in ~~claim 4~~ claim 19, wherein the bent edges of a plurality of, ~~in particular of up to five~~ plates mutually overlap.

21. (Currently amended) The heat exchanger as claimed in ~~claim 4~~ claim 19, wherein the wavy profile extends into the edge, ~~in particular over the edge~~.

22. (Currently amended) The heat exchanger as claimed in ~~claim 4~~ claim 19, wherein between the end of the wavy profile and the edge, a profile-free bending portion is formed, the width of which is smaller than 2 mm and is preferably determined in such a way that, during the brazing of the plates, the bending region is blocked with solder in wave crest portions in such a way that a throughflow of medium in the bending portion is reduced or essentially prevented.

23. (Currently amended) The heat exchanger as claimed in ~~claim 4~~ claim 11, wherein at least one end face of the heat exchanger is assigned a closing plate which is profileless, ~~in particular~~, at least on the outside and which preferably has connection

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points for a first and second medium, said connection points issuing into connecting lines and being arranged in alignment with the bores.

24. (Currently amended) The heat exchanger as claimed in claim 1, wherein the hydraulic diameter (hD) in the main direction of extent (D) has a fluctuation of at most 25%, ~~in particular at most 15%, in particular at most 10%,~~ 10% to 25% around an average value.

25. (Currently amended) The heat exchanger as claimed in claim 1, wherein the hydraulic diameter (hD) has an average value of ~~between 1 mm and 4 mm, and,~~ in the case of liquid media, ~~it is preferably between 1 mm and 2 mm and preferably around 1.4 mm, and,~~ in the case of gaseous media, ~~preferably~~ around 3 mm.

26. (Currently amended) ~~The heat exchanger as claimed in claim 1,~~ A heat exchanger, in particular oil cooler, for motor vehicles, the heat exchanger being formed from interconnected plates, there being formed between the plates cavities which are closed off outwardly and through which a first and a second medium flow alternately in each case via at least one inflow line and outflow line, the plates being profiled in such a way that, between the respective profiles of the plates, contact points occur, in the region of which the plates are fastened to one another, wherein the profiles of the plates and their contact points are designed in such a way that the flow, formed between the plates, of the first and the second medium from the corresponding inflow line to the corresponding outflow line does not run rectilinearly,

wherein the contact points between two plates adjacent to one another are distributed uniformly over the plate surface.

27. (Currently amended) The heat exchanger as claimed in claim 1, wherein the contact points between two plates adjacent to one another have a surface density of 4 to 7 per  $\text{cm}^2$ , ~~in particular of 5 to 6 per  $\text{cm}^2$ .~~

28. (Previously presented) The heat exchanger as claimed in claim 1, wherein a phase transition of a medium takes place in plate interspaces.

29. (Previously presented) The heat exchanger as claimed in claim 1, wherein the installation position of the heat exchanger is determined such that the transverse distribution of the medium in the plate interspaces is assisted by gravitation.

30. (Currently amended) A method for the production of a heat exchanger ~~particularly~~ as claimed in claim 1, wherein the method comprises, ~~in particular,~~ the steps of embossing the plates, of stacking the plates one on the other and of fastening them to one another, ~~preferably~~ by brazing.

31. (Previously presented) The method as claimed in claim 30, wherein the stacking of the plates one on the other takes place such that two adjacent plates are in each case rotated through 180 degrees with respect to one another.

32. (Previously presented) The method as claimed in claim 30, wherein brazing takes place in such a way that the plates are connected sealingly to one another at their edge, a connection of adjacent plates to one another at contact points of wavy profiles preferably taking place at the same time.

33. (New) The heat exchanger as claimed in claim 1, wherein said wavy profile includes at least three regions of curvature and at least four legs.

34. (New) The heat exchanger as claimed in claim 1, wherein the plates have first and second opposite side edges and first and second opposite end edges and wherein said wavy profile extends from said first side edge to said second side edge and from said first end edge to said second end edge.

35. (New) The heat exchanger as claimed in claim 34, including at least two openings interrupting said wavy profile.

36. (New) A heat exchanger for motor vehicles formed from interconnected plates, there being formed between the plates cavities connected to at least one inflow line and at least one outflow line to define first and second alternating flow paths,

the plates being embossed with a zig-zag profile comprising leg portions connected by curved portions, the leg portions in section comprising ridges having flat tops and valleys having flat bottoms, portions of said flat tops of a first one of said plates contacting portions of the flat bottoms of an adjacent one of said plates at



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contact points, said contact points being arranged to prevent fluid from flowing between the first one of said plates and the second one of said plates rectilinearly from the inflow line to the outflow line.